

***Remarks***

Reconsideration of this Application is respectfully requested.

***Status of the Claims***

Upon entry of the foregoing amendment, claims 1-4 and 6-39 are pending in the application, with claim 1 being the independent claim. Claims 16-20, added in the Preliminary Amendment filed on April 6, 2007, have been renumbered as claims 15-19 to correct an error in numbering. Claims 20-39 are sought to be added. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Support for amendments to the claims is found in the as-filed specification.

Support for new claims 20-39 is found in the as-filed specification.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

***I. Rejections Under 35 U.S.C. § 103(a)***

Claims 1-4 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 03/015518 (hereafter "Lahm"). (Office Action, page 3). Applicants respectfully traverse the rejection.

It is said:

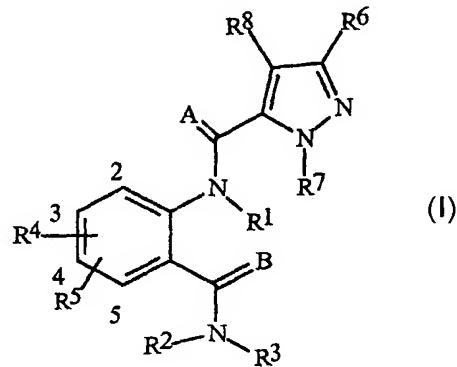
WO 03/015518 discloses a genus of pesticidal anthranilamides (pages 1-4), which includes the elected species (Example 11 on page 42; page 115, compound 531; see compound 531 in Tests A to H, K, M, P, Q, R on pages 127-138). It is noted for the record that this species has a common name, chlorantraniliprole. Various formulations are disclosed with diluents and surfactants (pages 89-90). Activity against a broad spectrum

of pests is disclosed, including mosquitoes, black flies, biting midges, ants, lice, fleas and many others (see e.g., page 93, lines 36-38; page 94, lines 2-25). Combination with fipronil, a 'most preferred' combination partner, is disclosed (page 96, line 37; page 98, lines 5, 18; claim 9). Various concentrations and rates of application are disclosed (page 99).

The difference between the claimed invention and WO 03/015518 is that although WO 03/015518 discloses and claims mixtures of anthranilamides that include chlorantraniliprole + fipronil, the specific mixture of chlorantraniliprole + fipronil is not expressly disclosed. However, given the excellent activity of chlorantraniliprole and the well known good activity of fipronil, one having ordinary skill in the art would have been motivated to follow the teachings of WO 03/015518 to arrive at the claimed combination of two active ingredients.

(Office Action, pages 3-4). Applicants respectfully disagree.

Lahm discloses a method of controlling certain insect pests by contacting the insects or their environment with a compound of formula (I):



(Lahm, page 2, line 1 – page 3, line 23). Millions of diamide pesticides are embraced within this disclosure. The substituent R<sup>7</sup> may be one of 90 ring systems (See *id.* at page 6, line 5 to page 10, line 9; definition of J-1 through J-90). Tables 1-6 disclose a vast array of individual diamides (See *id.* at page 56 – page 81, line 4). About

860 synthesized compounds are disclosed (See *id.* at page 100, line 11 – page 123, end: Index Table A).

From the vast disclosure of diamides within Lahm, the person of ordinary skill in the art would have had no reason to selected the recited genus of anthranilamides of formula (1) and combine them with the recited group (2) pesticides to provide a *synergistically effective* composition, as recited in claim 1.

Applicants are aware of the flexible approach for establishing obviousness set out in *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007). However, as cautioned by Judge Rader in a post-KSR decision in *In re Kubin*, 561 F.3d 1351 (Fed. Cir. 2009), "where a defendant merely throws metaphorical darts at a board filled with combinatorial prior art possibilities, courts should not succumb to hindsight claims of obviousness." (561 F.3d at 1359.) In rendering the rejection, the Examiner selected chlorantraniliprole from a vast number of diamide insecticides disclosed in Lahm, and picked fipronil by picking and choosing optional mixing partners disclosed in Lahm, based on impermissible hindsight. Furthermore, even if one would have picked and chosen presently claimed combination, one would not have any expectation other than merely additive effect of the combination. As such, Applicants contend that the Examiner's rejection is based on impermissible hindsight.

Reconsideration and withdrawal of the rejection is respectfully requested.

***II. Synergistic Effects Shown in the As-filed Specification Are Sufficient to Rebut Any Case of Prima Facie Obviousness***

Even assuming, *arguendo*, that a *prima facie* case of obviousness has been established, which it has not, the synergistic effect exhibited by the claimed invention is sufficient to rebut a *prima facie* case of obviousness.

The Examiner has rejected Applicants' showing of unexpected results as described in the as-filed specification. It is said:

Applicant's specification data has been reviewed in this regard but the elected species combination were not tested. The tested formula compound has a 3-CF<sub>3</sub> instead of the 3-Br of the elected species and has an extra methyl group on the amide group on the 6-position of the phenyl ring. Further, the results show only low rates were tested - in other words, only rates at which the known active pesticides did not kill were tested. Thus, the data is very limited and it cannot be determined whether similar data would be obtained when the known pesticides are used at their known active concentrations. Evidence of nonobviousness, if any, must be commensurate in scope with that of the claimed subject matter. In re Kulling, 14 USPQ2d 1056, 1058 (Fed. Cir. 1990); In re Lindner, 173 USPQ 356, 358 (CCPA 1972).

(Office Action, page 4). Applicants respectfully disagree.

The cases the Examiner cited are inapposite. *In re Kulling* concerned a "process for the treatment of a dilute iron (II) sulfate-containing sulfuric acid solution resulting from the hydrolysis of a titanyl sulfate solution" to recover the sulfuric acid and minimize metal contaminants. *In re Kulling*, 897 F.2d 1147, 1148 (1990). The process comprised concentrating a volume of a feed solution, separating solids suspended in the concentration step, and pre-washing the separated solids using an amount of feed solution equivalent to 2-4% of the volume concentrated. *Id.* The Applicant argued that the claims were patentable because only minimal amounts of chromium and vanadium were extracted with the recited wash volumes. *Id.* at 1149. The Court affirmed the

*prima facie* obviousness rejection of the Examiner and the Board, stating *inter alia* that the rejected claims read on solutions which contain neither chromium nor vanadium. *Id.* The Applicant therefore could not rely on the minimal contamination effect to rebut the *prima facie* case. *Id.*

In direct contrast to the facts of *In re Kulling*, the present specification and claims recite synergistic compositions and provide multiple examples of unexpected synergy. (As-filed specification, pages 40-50). As such, *In re Kulling* is not relevant to the present claims.

*In re Lindner* concerned a broad claim to a dispersant composition comprising a water-soluble to water-dispersible phosphoric acid ester and an organic solvent soluble surfactant polybasic acid compound. *In re Lindner*, 457 F.2d 506, 507 (C.C.P.A. 1972). Both components were known in the prior art as dispersants. *Id.* The Court affirmed the obviousness rejection of the Examiner and the Board that it would have been *prima facie* obvious to have combined them for the same purpose. *Id.* The Applicant attempted to rebut the *prima facie* case with *one* example showing a synergistic effect. *Id.* at 508. The Court agreed that *one* example was not commensurate with the scope of claims.

In contrast to the facts of *In re Lindner*, the present specification provides multiple examples of unexpected synergy with the claimed compositions. (As-filed specification, pages 40-50). Therefore, *In re Lindner* is not relevant to the present claims.

Furthermore, the absence of data for the elected species, fipronil + I-1-4 (chlorantraniliprole), is not fatal to the present claims. Compound I-1-4 is structurally closely related to the tested compound I-1-9. (As-filed specification, page 13). The

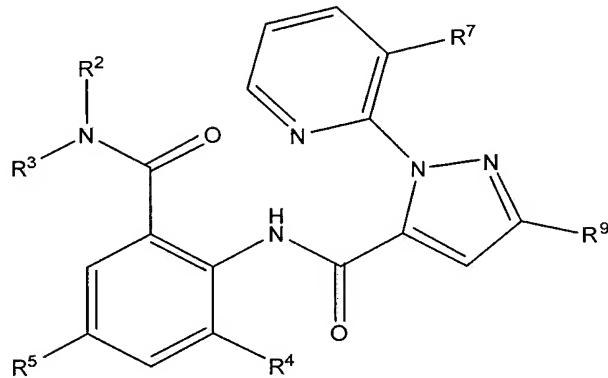
person of ordinary skill would have had a reason to extend the synergy shown in Examples A, E and F (See *id.* at pages 40, 45 and 48 respectively) to the elected species fipronil + I-1-4. Nonetheless, Applicants herewith provide data for the elected species fipronil + I-1-4 in declaration form (see below).

***III. The Synergistic Effects As Shown in the Hungenberg Declaration Provide Further Evidence of Unexpected Results***

Applicants also present the Declaration of Heike Hungenberg under 37 C.F.R. § 1.132 ("the Declaration") as Exhibit A. Examples A-D, described therein, provide evidence of the unexpected synergistic effects of the present invention.

In the Declaration, compounds of formula I-1 are referred to by compound number as listed in the as-filed specification. For simplicity, all compounds of formula I-1 that are in the Declaration are provided in Table 1 below.

**Table 1: Compounds of formula I-1 in the Hungenberg Declaration**



Compound No.	R <sup>2</sup>	R <sup>3</sup>	R <sup>4</sup>	R <sup>5</sup>	R <sup>7</sup>	R <sup>9</sup>
I-1-1	H	Me	Me	Cl	Cl	CF <sub>3</sub>
I-1-4	H	Me	Me	Cl	Cl	Br
I-1-12	H	i-Pr	Me	Cl	Cl	Br
I-1-24	H	t-Bu	Me	Cl	Cl	CF <sub>3</sub>
I-1-52	H	Me	Br	Br	Cl	CF <sub>3</sub>
I-1-54	H	i-Pr	Br	Br	Cl	CF <sub>3</sub>

In Example A of the Declaration, cabbage leaves heavily infested by green peach aphids (*Myzus persicae*) were dipped into preparations of test compounds I-1-4, ethiprole, I-1-54, I-1-1, I-1-24, I-1-12 and fipronil. As indicated in the headings of Tables A1 and A2, the per cent mortality was measured for each test after 1 day and 6 days, respectively.

According to Tables A1 and A2, ethiprole was tested in a 1:1 ratio with compounds I-1-4, I-1-54, I-1-24 and I-1-12. According to the Colby formula, the combinations of ethiprole and the tested compounds provided synergistic effects compared to when the single compounds were tested.

According to Table A2, fipronil was tested in a 1:1 ratio with compound I-1-1.

According to the Colby formula, the combination of fipronil and compound I-1-1 provided a synergistic effect compared to when the single compounds were tested.

In Example B of the Declaration, cabbage leaves were dipped in preparations of of test compounds I-1-52, I-1-1, I-1-24, I-1-12, I-1-4, ethiprole, fipronil and I-1-54, and the resulting leaves infested with mustard beetle larvae (*Phaedon cochleariae*). As indicated in the headings of Tables B1 and B2, the per cent mortality was measured for each test after 2 days and 6 days, respectively.

According to Tables B1 and B2, ethiprole was tested in a 1:1 ratio with compounds I-1-24, I-1-12, I-1-4, I-1-54, I-1-52, and I-1-1. According to the Colby formula, the combinations of ethiprole and the tested compounds provided synergistic effects compared to when the single compounds were tested.

According to Tables B1 and B2, fipronil was tested in a 1:1 ratio with compounds I-1-52, I-1-1, I-1-24, I-1-12, and I-1-4. According to the Colby formula, the combinations of fipronil and the tested compounds provided synergistic effects compared to when the single compounds were tested.

In Example C of the Declaration, cabbage leaves were dipped in preparations of of test compounds I-1-54, I-1-4, ethiprole, fipronil, I-1-52, I-1-24, and I-1-12, and the resulting leaves infested with fall armyworm larvae (*Spodoptera frugiperda*). As indicated in the headings of Tables C1 and C2, the per cent mortality was measured for each test after 2 days and 6 days, respectively.

According to Tables C1 and C2, ethiprole was tested in a 1:1 ratio with compounds I-1-54, I-1-4, I-1-52, I-1-24 and I-1-12. According to the Colby formula, the

combinations of ethiprole and the tested compounds provided synergistic effects compared to when the single compounds were tested.

According to Tables C1 and C2, fipronil was tested in a 1:1 ratio with compounds I-1-54, I-1-52 and I-1-12. According to the Colby formula, the combinations of fipronil and the tested compounds provided synergistic effects compared to when the single compounds were tested.

In Example D of the Declaration, bean plants heavily infested by OP-resistant two-spotted spider mites (*Tetranychus urticae*) were dipped into preparations of test compounds I-1-24 and ethiprole. As indicated in the heading of Table D1, the per cent mortality was measured for each test after 6 days. According to the Colby formula, the combination of ethiprole and compound I-1-24 provided a synergistic effect compared to when the single compounds were tested.

For the reasons set forth above, Applicants respectfully request that the Examiner reconsider the evidence of unexpected effects presented in the specification and in the Declaration and that the rejection be withdrawn.

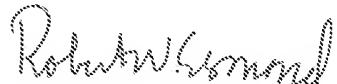
***Conclusion***

Prompt and favorable consideration of this Amendment is respectfully requested.

Applicants believe the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Robert W. Esmond  
Attorney for Applicants  
Registration No. 32,893

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1100 New York Avenue, N.W.  
Washington, D.C. 20005-3934  
(202) 371-2600

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